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Living on the Edge

Risk, Protection, Behavior, and Outcomes of Argentine Youth

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Social Development Family
&
Human Development Network
Social Protection Team
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Abstract

Risk and protective factors influence behaviors and outcomes for youth. While risk factors expose youth to risk-taking behavior that compromises well-being and hinders personal development, protective factors mediate risk and act as protective mechanisms that insulate youth from negative outcomes. This paper groups youth by risk levels using a cluster analysis methodology, and identifies the risk and protective factors that characterize these groups. Using data from a new household survey covering youth in four urban areas of Argentina in 2005, youth are clustered by characteristics in relation to family and health, education and income, substance abuse, and crime and violence as indicators of risk and protective factors, and behaviors and consequences. Almost half of Argentine youth are at an elevated risk level, and one in four is at serious risk of experiencing negative outcomes or already suffering the consequences. The findings show, for example, that higher income protects against risk factors, such as an insecure neighborhood, and facilitates youth attending school. Furthermore, parents' lack of education is negatively related to the behaviors and outcomes of their children.

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Risk, Protection, Behavior, and Outcomes of Argentine Youth

By

Michael Justesen

World Bank[1]

JEL Classification: I10, I20, J12, J13, J15, J16, J24.
Keywords: Youth, risk and protective factors, outcomes and behaviors, cluster analysis, Argentina.

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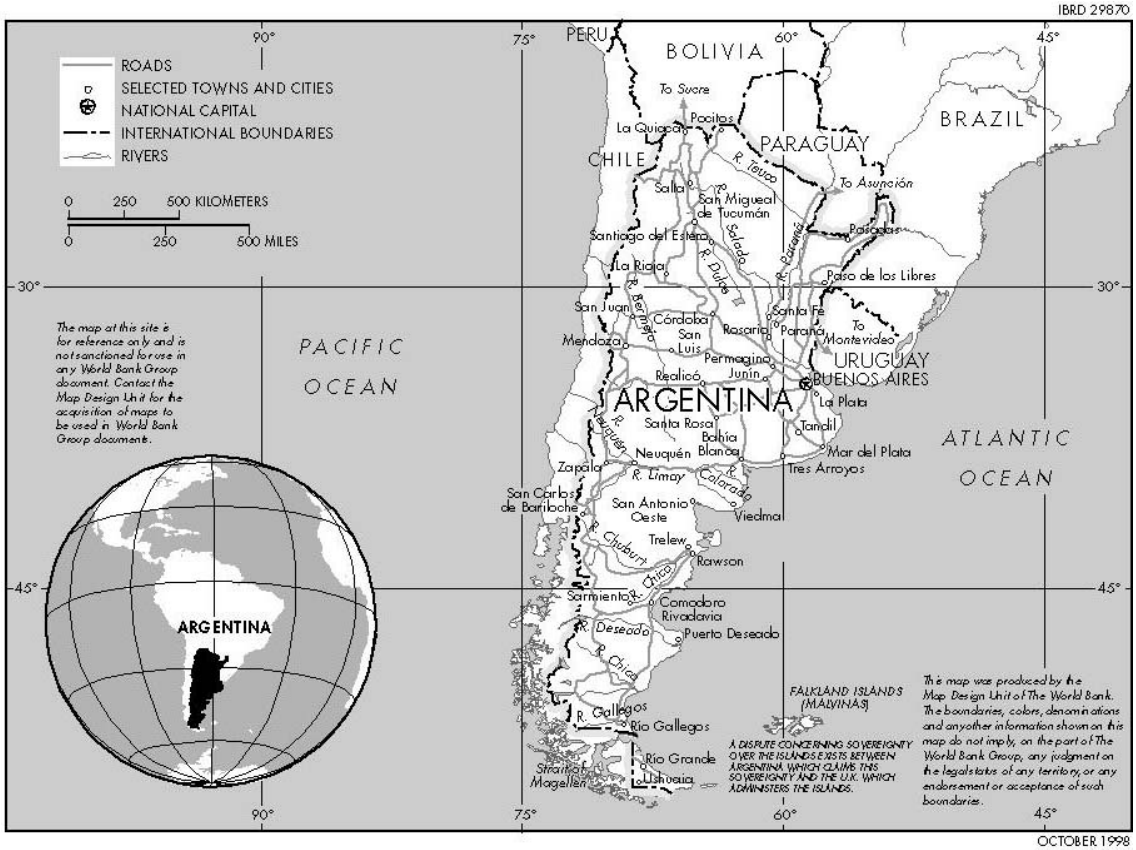
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1. Introduction

Youth in Argentina are to a large extent better off than their Latin American peers.[2] Most youth in Argentina are well educated and well nourished, but still a significant proportion are exposed to serious risk factors and end up with negative (behavioral) outcomes such as committing, or being a victim of, crime or dropping out of school.

Early in life, various risk and protective factors determine an individual's preferences, expectations, and responsibilities, and establish an understanding of the individual's place in and way of interacting with society. Risk factors may expose youth to risk-taking behavior or outcomes that compromise well-being and hinder personal development. Such behavior or outcomes include domestic violence, low parental education, and living in an insecure neighborhood. Counterbalancing the risk factors are protective factors that mediate risk, such as trust in the community, connection to parents or high income, and which act as protective mechanisms that insulate youth from negative effects (Justesen and Verner 2007a, Fitzpatrick 1997). In the transition from childhood to adulthood, youth will undertake or be exposed to both risk and protective behaviors, which have implications for outcomes and the likelihood of a happy, healthy, and productive life. Risk-taking behavior early in life is likely to have negative impacts on the ability of youth to handle stressful experiences later in life, and may lead to destructive or antisocial behavior (Barker and Fontes 1996). For example, early sexual initiation may lead to too early motherhood or low parental education may lead to early school dropout. In contrast, trust in the community may lead youth to participate more in social events, and high income may facilitate advanced education. Furthermore, an outcome resulting from a combination of risk factors and lack of protective factors may affect other outcomes and thus be a factor itself. For example, domestic violence may negatively impact education, and low education may adversely impact the likelihood of finding work.

This paper groups youth in four cities by risk levels, and identifies what risk and protective factors characterize these groups. Secondly, the paper seeks to establish hypotheses of causality between risk and protective factors and behavioral outcomes; providing a clear argument for policy interventions to support youth.

The cluster analysis shows that around half of Argentine youth in the four urban areas have few protective factors and are at elevated risk of or are already suffering negative outcomes. One in four youth are at a very high risk level and in great need of immediate intervention. While risk factors are found to be clearly associated with negative behavioral outcomes, protective factors seem to help youth toward positive outcomes.

[2] The definition of youth varies depending on the context. It may, for example, be determined in relation to the developmental stage as the proportion of same-age youth enrolled in school or the proportion working. Such definitions show great variation at country or regional level with respect to defining youth as a certain age group. The age group used here is 15–24 years, which is the United Nations' definition of youth.

This paper consists of 5 sections. The next section describes the data and methodology used for the cluster analysis. Section 3 sets the stage by describing Argentine youth in general, while Section 4 applies the cluster methodology, discusses the clusters, and examines linkages between risk and protective factors and behavioral outcomes. Finally, Section 5 concludes the paper.

2. Data and Methodology

This section describes the data used for the analysis below. Furthermore, the clustering procedure is described and variables defined. Findings from the cluster analysis are discussed in Section 4.

2.1 Data

The data used are from a household survey conducted between November 26 and December 18, 2005 containing 2,009 individuals. Of these individuals, 1,275 were between the ages 15 and 24 and thereby classified as youths for this purpose. The questionnaire was done by FLACSO (Facultad Latinoamericana de Ciencias Sociales) in corporation with and financed by the World Bank, and used a methodology similar to that of EPH (Encuesta Permanente de Hogares) by INDEC (Instituto Nacional de Estadística y Censos). The interviews covered four cities in Argentina; Grand Buenos Aires, Neuquén, Posadas, and Salta, and data are representative for urban households with one or more youth in these areas. The sample of youth is not nationally representative, but the sample of youth will henceforth be referred to as Argentine youth for simplicity. Thus, it is important to stress that the term "Argentine youth" is too generalizing, and that conclusions only are based on youth in the four urban areas included in the sample. Still, findings provide valuable insights to these urban areas, and help specify what to look out for when trying to identify youth at risk in other areas. The data are named ESCVJA (Estudio Sobre Condiciones de Vida de Jóvenes y Adultos).

2.2 Methodology

A cluster analysis is intended largely for generating rather than testing hypotheses. The cluster methodology is applied to organize youth into groups whose members are similar in some way (see, e.g., Berkin 2002, Fasulo 1999). Based on these clusters and their observed characteristics and behaviors, hypotheses of causality between observed factors and outcomes can be established.

The approach to clustering applied here is hierarchical, i.e., youth are divided into hierarchically related sets of clusters. Agglomerative hierarchical clustering is used, which means the process begins with each observation being considered as a separate group. The closest groups are combined, and this process continues until all observations belong to the same group. This process creates a hierarchy of clusters. Ward's linkage method is used for choosing what should be compared between groups that contain more than one observation. This method minimizes the sum of within group variance of all

clusters (Cunningham and Maloney 2001).[3] The error sum of squares (ESS) is minimized under the assumption that there are i=1,…,n observations with j=1,…,k variables for each i, and that the number of clusters ranges from 1 (where all i are assigned to the same cluster) to n (where each i has its own cluster):

$$Min\left(ESS=\sum_{m=1}^{m=g}\sum_{j=1}^{j=k}\sum_{i=1}^{i=n_m}\left(x_{ijm}-\bar{x}_{jm}\right)^2\right),$$

where x_{ijm} is the value of the jth variable for the ith of n_m observations in the mth cluster and $\bar{x}_{jm}$ is the mean of variable j in the mth cluster.

To determine the number of clusters, two indicators are examined. First the Duda and Hart Je(2)/Je(1) index is examined to see if the stopping rules are conclusive. Second, dendrograms, which show the similarity of different clusters, by considering different numbers of clusters, are examined.

The cluster analysis requires redefining the values of variables, selecting variables for the clustering process and categorizing variables in risk and protective factors and outcomes and behaviors. The values of variables have to be within the interval 0 and 1 for the cluster analysis. Binary variables tend to drive the clustering process, and therefore most variables have been redefined to a broader set of values inside the interval. Also to avoid certain variables driving the results, not all variables are included in the cluster process, but included in the later analysis of the clusters.[4] Further information on assigned values and selection and categorization of variables is given in Appendices A and B.

3. Youth Overview

This section provides an overview of youth in Argentina and introduces different risk and protective factors. The main areas of factors discussed are family and health, education and income, substance abuse, and crime and violence. However, first demographics are examined.

3.1 Demographics

Argentine youth are growing in numbers. The age distribution of the Argentine population is changing from a classic pyramid shape with large child cohorts, middle size youth cohorts, and relatively small adult and old cohorts into a silo shape with many youth and adults. Table 3.1 confirms for the sample of youth in four cities that younger cohorts of youth are the largest and almost half of youth are 18 years old or less.

[3] Ward's method is a hierarchical clustering approach where groups are joined to maximize an objective function.

[4] The categorization and selection of variables for the clustering process applied here is based on the work and advice of Emily Bagby and Wendy Cunningham, who analyzed the cases of Chile and Mexico.

Table 3.1: Age Distribution for Argentine Youth, 2005		
Age	Percent	Cumulative
15 years	11.84	11.84
16 years	13.25	25.1
17 years	12.47	37.57
18 years	9.80	47.37
19 years	11.37	58.75
20 years	9.33	68.08
21 years	8.39	76.47
22 years	8.24	84.71
23 years	7.84	92.55
24 years	7.45	100
Source: Own calculations on ESCVJA (four urban areas)		

The number of youth in the entire country is currently peaking, and is projected to continue at that level until 2030 (Lam 2006), and this creates economic opportunities if optimally exploited. The current youth bulge creates economic opportunities for Argentina resulting from a potentially favorable ratio of working age population to the dependent population, once the surge has topped and youth move into adulthood and hopefully experience a successful transition into the labor market. As an example to follow, the rise in working population to non-working population in East Asia, following the youth bulge, played an important role in the economic miracle in the region (ibid.). In contrast, lack of opportunities for youth may have unbearable consequences for the country.

With youth being a large proportion of the population, it is immensely important for the country to ensure a smooth transition from childhood to adulthood and from school to work. This paper will not address these issues in particular, but consider what factors are important in determining whether or not youth will experience good or bad outcomes.

3.2 Family and Health

The family is a strong protective factor but can also be an important risk factor. Support and security provided by parents are extremely important in a young person's development. In contrast, lack of support from parents, or too many responsibilities, for example, because of marriage and having children too early, jeopardizes the well-being of youth.

A large proportion of youth live with only one or no parent in the household. While it should not be considered a risk factor for youths over a certain age to live without their parents, younger cohorts still need support and guidance from an adult. Of the 15 year old youth, just 3.4 and 4.8 percent of female and male youth, respectively, live without any of their parents (Table 3.2). However, only 23.9 and 36.5 percent of females and males, respectively, in this age group live with both their father and mother in the household. Considering slightly older age groups (16─17 years), 7─13 percent live without a parent in the household. In contrast, nearly half of the 24 year old females and a

third of same age males live without their parents. To move out to live alone or with a spouse when reaching a certain age is not to be considered a negative event, but simply a step toward maturity and independence.

Table 3.2: Parents Present in Households with Argentine Youth, 2005

	Female Youth			Male Youth		
	None	One	Both	None	One	Both
15 years	3.4	72.7	23.9	4.8	58.7	36.5
16 years	13.2	57.1	29.7	10.3	65.4	24.4
17 years	7.4	70.4	22.2	7.7	47.4	44.9
18 years	10.8	52.3	36.9	11.7	60.0	28.3
19 years	19.7	54.9	25.4	8.1	66.2	25.7
20 years	30.6	51.4	18.1	21.3	49.0	29.8
21 years	28.8	42.4	28.8	14.6	60.4	25.0
22 years	37.5	41.1	21.4	20.4	59.2	20.4
23 years	35.0	40.4	24.6	27.9	44.2	27.9
24 years	49.2	30.2	20.6	31.3	46.9	21.9

Source: Own calculations on ESCVJA (four urban areas)

Argentine females tend to marry and have children earlier than males do. This is an important reason why female youth are more likely to live without a parent in the household than male youth are (Table 3.2.). Fourteen percent of female youth are married, while only 5 percent of male youth are (Table 3.3).

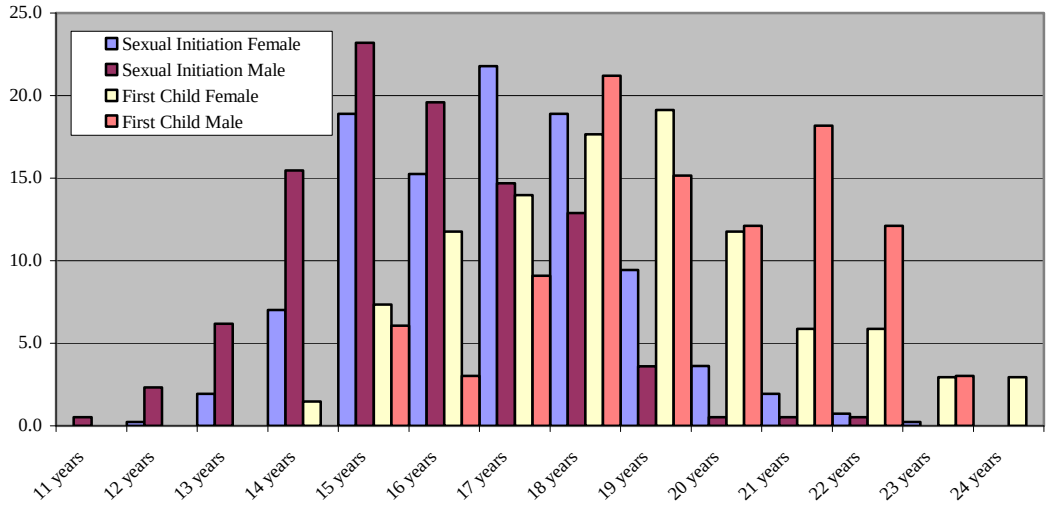
Table 3.3: Civil Status for Argentine Youth, 2005

	Female	Male
Single	85.4	94.9
Married	13.7	4.9
Separated/divorced	0.6	0.0
Widow	0.0	0.0
Other	0.4	0.2

Source: Own calculations on ESCVJA (four urban areas)

Early sexual initiation is a serious risk factor. Female youth have their sexual initiation later than male youth on average (Figure 3.1). More than two out of three male youths have had sex, while just above half of females have. Of youths who have already been sexually active, almost one in four boys had had sex at 14 years or less, while fewer than one in ten girls at the same age had. Of the same group, more than 70 percent became sexually active between the ages 15 and 18 years; this is the case for both males and females. Early sexual initiation is a significant risk factor, because it may lead to teen pregnancy or sexually transmitted diseases (STDs) such as HIV/AIDS if the necessary precaution is not taken. Healthcare, which may help prevent exposure to these risks or alleviate the consequences, is limited to just above half of the young population.

Figure 3.1: Sexual Initiation and First Child, by Age and Gender (percent of those having initiated sex or have at least one child), Argentina 2005



Source: Own calculations on ESCVJA (four urban areas)

The risk of early motherhood or STDs is confirmed by the lack of use of contraception among young females (Table 3.4). While males initiate sex earlier than females, they are also better at protecting themselves by the use of condoms; of males, 31 percent below 18 years use condoms, compared to only 16 percent of their female peers. Thus, 10 percent of young women—age 18 or less—are exposed to the risk of STDs or teenage pregnancy. This number increases to 39 percent above 18 years, naturally explained by the higher proportion in a steady relationship or in marriage.

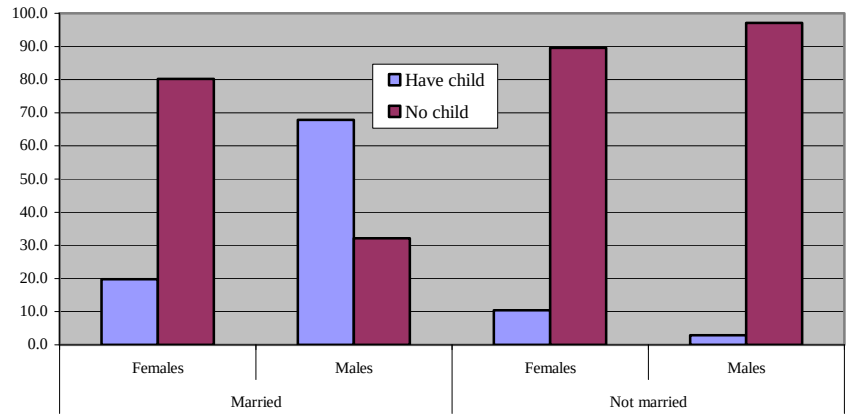
Table 3.4: Contraception use among Argentine Youth, 2005

	Below 18 years		18 years or above	
	Female	Male	Female	Male
Never had sex	74.2	66.2	21.9	11.1
Safe sex (condoms)	15.8	30.6	39.1	80.7
Unsafe sex	10.0	3.2	39.1	8.2

Source: Own calculations on ESCVJA (four urban areas)

Not surprisingly, early sexual initiation and marriage increase the likelihood of having children. Figure 3.1 shows that the proportion by age when having the first child follows the sexual initiation by a lag of a couple of years. Ten percent of youth are married and 13 percent have at least one child. Unsafe sex and marriage are naturally intertwined, and married youth are much more likely to have a child than singles are (Figure 3.2). While 20 (68) percent of married females (males) have a child, 10 (3) percent of single females (males) do.

Figure 3.2: Marriage and Children in Argentina, 2005 (percent)



Source: Own calculations on ESCVJA (four urban areas)

Social interaction is important for youth to thrive. A strong relationship to the family is crucial, but it is also important for youth to be engaged through cultural societies or sports clubs. Furthermore, it is important for youth to exercise citizenship by being active in political debates or participate in youth societies regarding, for example, the community, studies, religion, etc. (World Bank 2007).[5] Argentine youth in the four cities covered are generally well integrated since more than 50 percent participate in sports and 17 percent take part in cultural activities. Also, in respect to voting, most youth (above 18 years) are active: Almost 3 out of 4 answered they voted at the last election. Being well connected and active are protective factors that are likely to lead to desirable outcomes such as exercising citizenship by voting.

3.3 Education and Income

Education is an important protective factor for youth, because it increases productivity and facilitates social integration. Until a certain age, youth should be in school to build their skills, but later in life a smooth transition to the labor market is optimal, in order to obtain a financially independent and stable life. Early dropout from school and idleness or early work are risk factors for youth, because these issues are connected with low income, substance abuse, etc. (see Section 3.4).

The education system in Argentina is fairly advanced compared to those in most Latin American countries. In fact, primary education enrollment is at par with European countries such as France, Germany and Italy.[6] Furthermore, it is noteworthy that females tend to be better educated than males (Table 3.5).

[5] The World Development Report 2007 defines a citizen as to be a member of a political community and to enjoy the privileges and protections, as well as the incumbent obligations associated with community membership. Active citizenship emphasizes how individuals should hold public officials accountable for their actions, demand justice for themselves and others, tolerate people who are ethnically or religiously different, and feel solidarity with their fellow human beings.

[6] WDI (2006).

Table 3.5: Education Level Completed or Attending (percent), Argentina 2005		
	Female	Male
None	0.14	0.00
Primary	14.22	16.61
Secondary	56.90	59.44
Tertiary	28.73	23.95
Proportion (percent)	55.1	44.9
Source: Own calculations on ESCVJA (four urban areas)		

Intergenerational linkages matter for education level and earnings. Generally, Argentines from richer households are more educated than those from low-income households. A plausible reason for this is that richer parents can pay for private schools or tutors for their children; nearly one in four youth attend or has attended a private school. Also, youth from poor households are more likely to have to leave school to work to add to the household income. In addition, education is extremely important for the level of hourly wages received; higher education leads to far higher hourly real wages (Justesen and Verner 2007b). Thus, youth are to a large extent locked in an income bracket, because of intergenerational linkages. Table 3.6 reveals that of youth in the sample with parents without any completed level of education, 36 percent have only completed primary education, and 9 percent have completed tertiary education. In contrast, of youth with a tertiary educated parent, 7 percent have completed primary education, while 48 percent have completed tertiary education. Thus, lack of parent's education is a serious risk factor of youth leaving school early and ending up in a low paid job.

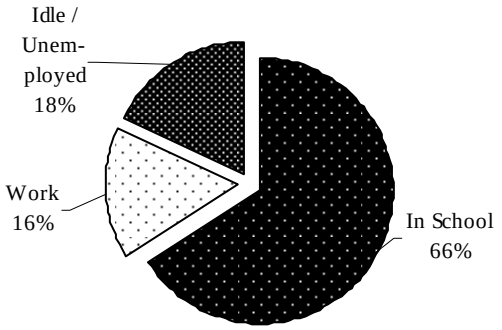
Table 3.6: Intergenerational Education Linkages in Argentina (percent)						
		Education Level of Youth				
		None	Primary	Secondary	Tertiary	Total
Education level of parents	None	0.0	35.7	55.6	8.7	100.0
	Primary	0.0	18.3	62.5	19.2	100.0
	Secondary	0.2	9.3	58.6	31.9	100.0
	Tertiary	0.0	7.3	45.2	47.5	100.0
Note: Parents' education level defined as highest educated parent.						
Source: Own calculations on ESCVJA (four urban areas)						

Financial means in the household may also increase youth development, since in addition to schooling financial means allow access to computers, internet, mobile phones, etc. Some 55 percent of young Argentines in the four cities in the sample have a mobile phone and 42 percent have a computer. The internet is used by 70 percent and practically all of these have an email account. Thus, a large proportion of youth are able to communicate and interact using technical equipment, which is needed to work productively, especially in the growing service sector.

Most youth attend school, but a third are either idle, unemployed, or working. Figures 3.3 and 3.4 show that two-thirds of both female and male youth attend school. While 26 percent of male youth work, just 16 percent of female youth work. Thus, the proportion left idle or unemployed among females is more than double the proportion of

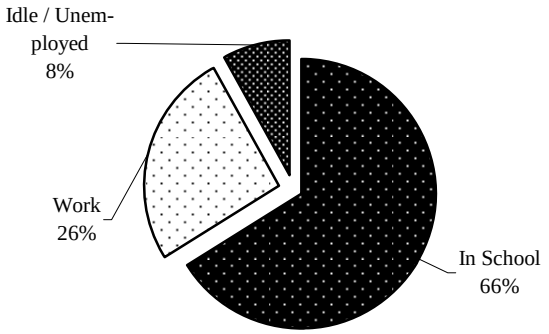
males in this state. This is likely to be explained by females having household chores and taking care of (their) children. Some 15 percent of youth have dropped out from school—rather than graduated. Dropping out of school is a serious risk factor, because it is connected with other risk factors and negative outcomes. For example, Eckstein and Wolpin (1999) argue that dropouts have different unobserved traits than those completing an education, such as lower motivation, ability or expectations of return, higher value of leisure, and lower consumption value of attending school. Lack of education and having these traits likely affect the chance of a positive outcome negatively in a number of ways, through the relation to jobs and income, but also through its impact on safe sex or domestic violence where education may help reduce risk, because of precautionary measures.

Figure 3.3: Activity for Female Youth in Argentina, 2005



Source: Own calculations on ESCVJA (four urban areas)

Figure 3.4: Activity for Male Youth in Argentina, 2005



Source: Own calculations on ESCVJA (four urban areas)

Child and teenage work are often considered significant risk factors, because they can have devastating effects on human capital accumulation over time (see, e.g., Fares and Raju 2007). In the sample analyzed here, 18 percent of female youth and 27 percent of male youth had their first job before turning 15 (Table 3.7). However, most youth get their first job when they are between 15 and 19 years of age.

Table 3.7: Age at First Job for Argentine Youth, 2005

Age	Female	Male	Age	Female	Male
5 years	0.0	0.3	15 years	13.4	13.1
6 years	0.0	0.3	16 years	15.3	18.5
7 years	0.5	0.5	17 years	13.6	11.1
8 years	0.5	1.7	18 years	16.7	19.7
9 years	0.0	1.0	19 years	10.5	5.2
10 years	0.7	1.7	20 years	6.9	3.0
11 years	0.2	2.2	21 years	2.9	1.5
12 years	4.1	5.9	22 years	1.9	0.7
13 years	5.0	5.7	23 years	0.7	0.5
14 years	7.2	7.6			

Source: Own calculations on ESCVJA (four urban areas)

For youth in the labor force, unemployment is a big problem. Youth unemployment topped in 2002 at 38.8 percent in urban areas according to a nationally representative household survey (PNAD); with a higher rate for female than for male youth (Justesen and Verner 2007b). Lack of jobs is an important reason for youth not to be employed, but youth also perceive lack of experience, low age, lack of education, and the lack of social connections to be important issues (Table 3.8). Thus, social relations including memberships in sport clubs, etc., can be a protective factor easing the transition into the labor market for youth, as well as benefiting the well-being of youth in other ways. Few youth find discrimination to be a reason for being without a job. This is partly explained by less than 5 percent of the sample being indigenous; a group particularly vulnerable to (racial) discrimination. Exposure to discrimination is an obvious risk factor for marginalization.

Table 3.8: Perceived Reason for Not Working, Argentine Youth, 2005 (percent)

Reason	Female	Male
Not enough experience	30.8	23.0
Not enough education	11.1	13.5
Not have specific requirement	1.7	2.7
Not have social connection	7.7	6.8
Not have characteristics required	2.6	2.7
Not enough work	12.8	13.5
Discrimination	3.4	2.7
Too young	15.4	16.2
Too old	0.9	0.0
Other reasons	13.7	18.9
Total	100.0	100.0

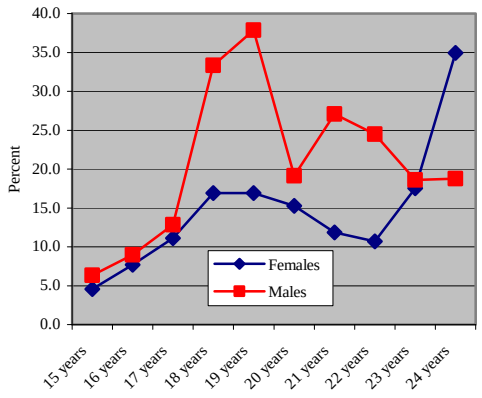
Note: Only youth looking for a job are included.
Source: Own calculations on ESCVJA (four urban areas)

3.4 Substance Abuse

Substance abuse is an undesirable outcome for youth, because it is associated with negative effects on work ability, human capital accumulation, health, and school dropout (e.g., Chatterji and DeSimone 2005).

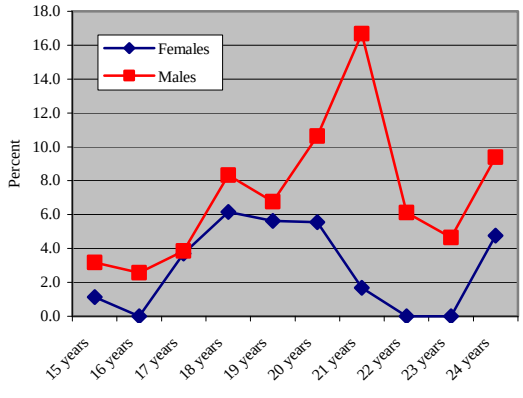
Frequent drinking and smoking is common among Argentine youth and generally more so for young males than for females (Figures 3.5 and 3.6). While 4 to 6 percent of 15 year old Argentines drink frequently, the proportion quickly increases, and at the age of 18, 17 and 33 percent of females and males, respectively, drink frequently. It appears that after a few years of experimenting around the legal drinking age (18 years), the use of alcohol and tobacco drop to a lower level. Toward the end of youth, a new increase in the use of alcohol and tobacco appears.

Figure 3.5: Proportion of Argentine Youth who Drinks Frequently by Age and Gender, 2005



Source: Own calculations on ESCVJA (four urban areas)

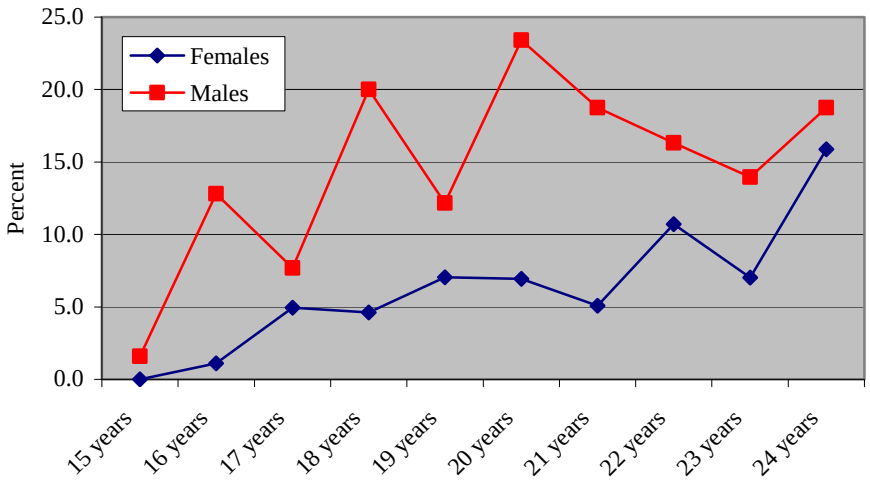
Figure 3.6: Proportion of Argentine Youth who Smokes Frequently by Age and Gender, 2005



Source: Own calculations on ESCVJA (four urban areas)

Abuse of illegal drugs, such as marihuana or cocaine, is a behavior of more concern than smoking and drinking, but also less prevalent. These drugs causes more concern both because the physical and mental effects are much stronger than those of alcohol and normal tobacco, and because of the association with crime and violence. Some 9 percent of all youth have tried drugs. At the age of 15, practically no youth have tried drugs, but with a steady increase, 16 percent of female youth and 19 percent of male youth have tried drugs at the age of 24 (Figure 3.7).

Figure 3.7: Proportion of Argentine Youth who have tried Drugs, by Gender, 2005

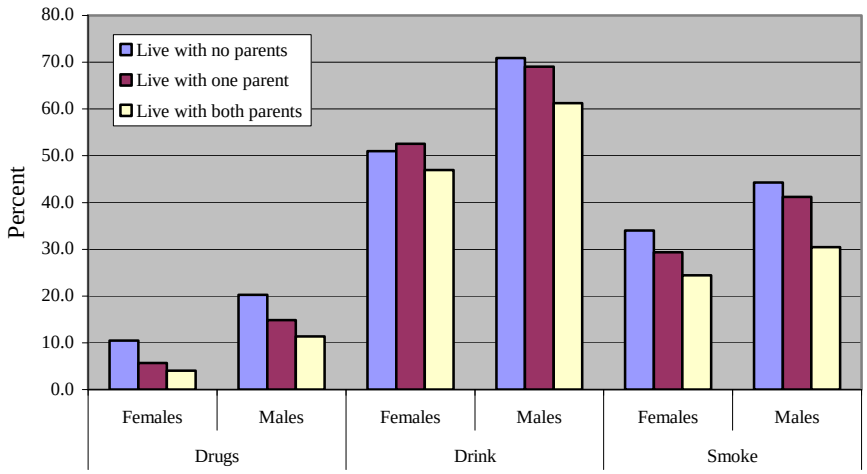


Source: Own calculations on ESCVJA (four urban areas)

Lack of parental support and a safe and stable home affect the likelihood of youth to drink, to smoke or to illegal drug abuse. Figure 3.8 shows that for both female and male youth, it is always those living with both parents who are less likely to use any of these substances, compared to youth living with no parents. Naturally, a part of this is explained by age differences, because older youth are more likely to live without a

parent, but the fact that the rate of substance abuse, of those with one parent in the household, are placed between those of the two extremes, lends support to the hypothesis of the importance of parental support in keeping youth away from substance abuse.

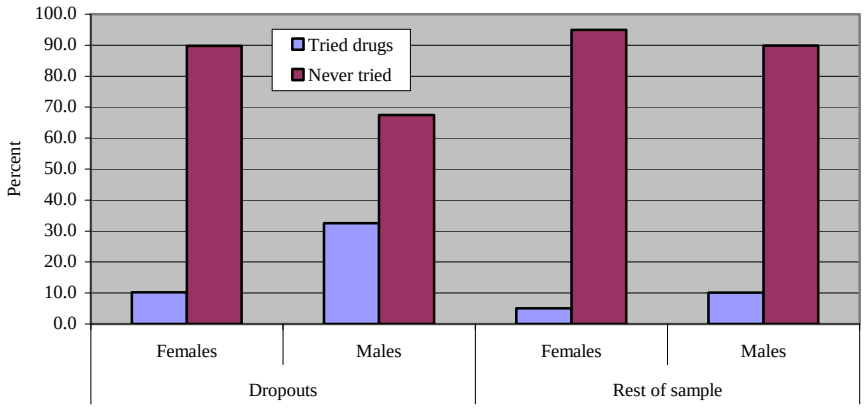
Figure 3.8: Connection between Parents and Substance Abuse, Argentina 2005



Source: Own calculations on ESCVJA (four urban areas)

Drug abuse and school dropout are serious negative outcomes, and they are closely linked. Youth, who have tried drugs, are more likely to have dropped out of school or vice versa (Figure 3.9).[7] This is the case irrespective of gender. Keeping in mind that factors and outcomes are not clearly distinct, in the sense that a consequence or outcome caused by some factors, may be a factor for a new outcome, it is possible to consider the hypothesis of either drug abuse or school dropout causing the other. The testing of this hypothesis is left for future research.

Figure 3.9: School Dropout and Drug Abuse for Argentine Youth (percent), 2005



Source: Own calculations on ESCVJA (four urban areas)

[7] This relation is not simply explained by age differences, because dropout is distinct from graduating from school in the questionnaire.

3.5 Crime and Violence

Living in an insecure neighborhood puts youth at risk of crime and violence and many young Argentines live with a feeling of insecurity (Table 3.9). While 30.0 (40.4) percent of female (male) youth feel secure or very secure in their neighborhood, 26 (20) percent of female (male) youth feel insecure or very insecure.

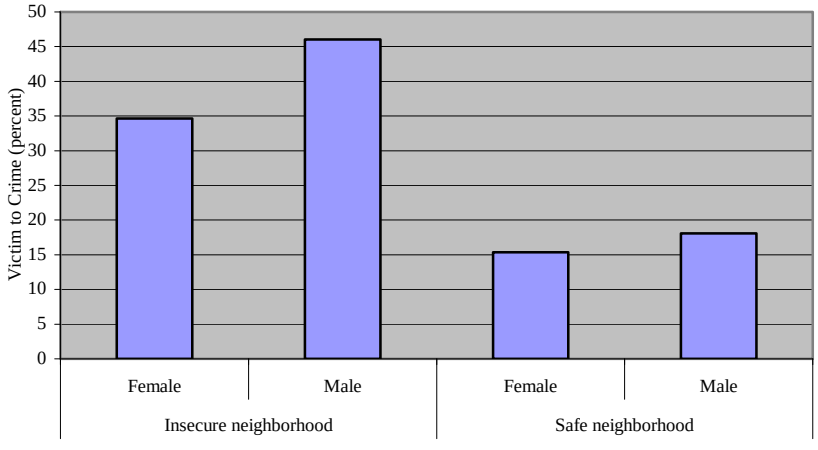
Table 3.9: Feeling of Security in Neighborhood for Argentine Youth

	Female	Male
Very insecure	7.2	6.0
Insecure	18.9	13.9
More or less secure	43.9	39.7
Secure	27.6	36.4
Very secure	2.4	4.0
Proportion (percent)	55.1	44.9

Source: Own calculations on ESCVJA

An insecure neighborhood increases the risk of being victimized and reduces the feeling of security with development damage as a consequence. Being victimized or witnessing violence leads to low ability to confront stressful situations and antisocial and self-destructive behavior, because of developmental damage (Barker and Fontes 1996). Moreover, crime and violence are risk factors, because they have long-lasting financial effects and erode human and social capital. Figure 3.10 shows that the likelihood of becoming a victim to crime is highly correlated with feeling the neighborhood is insecure. Fully 22 percent have experienced crime. Naturally, causality flows in both directions: An insecure neighborhood increases the risk of being victimized, but being victimized also reduces the feeling of security. Out of all youth in the sample, seven females in a thousand have been exposed to or committed forced sex; for males it is thirteen in a thousand.

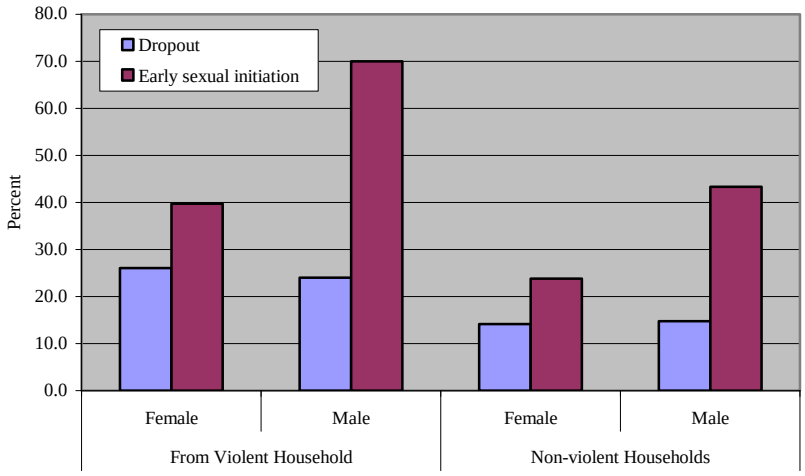
Figure 3.10: Secure Neighborhood vs. Victim to Crime for Argentine Youth, 2005



Source: Own calculations on ESCVJA (four urban areas)

Domestic violence is a risk factor and it is strongly linked to other risk factors and negative outcomes. In Argentina, 10 percent of youth have experienced domestic violence.[8] Figure 3.11 shows a correlation between domestic violence and negative outcomes for the case of Argentine youth. Youth who experience domestic violence are more likely to dropout of school than their peers from non-violent households or dropouts are more likely to be exposed to domestic violence; there is likely reverse causality. On the one hand it may be that youth from a violent home find it harder to handle stressful situations, do their homework or pay attention in school and this leads them to drop out. On the other hand it may be that youth who have dropped out of school have disappointed their parents, who react with violence, or that for example a negative income shock has required the young person to leave school to work and now lives in a more troubled situation to which violence becomes a vent of frustration. Also, youth from violent households have their sexual initiation at an earlier stage in life (before age 18) than youth from non-violent households, increasing the risk of teenage pregnancy or STDs. Thus, domestic violence is correlated with negative outcomes. In addition, one in a hundred youth have had forced sex.

Figure 3.11: Domestic Violence vs. School Dropout and Early Sexual Initiation, Argentina 2005



Note: Early sexual initiation is for the age group 15─18 years.
Source: Own calculations on ESCVJA (four urban areas)

4. Cluster Analysis

The entire data sample is used for one cluster analysis rather than splitting the data by certain characteristics. While it potentially is interesting to divide the data by, for

[8] In the USA, 75 percent of violent juvenile offenders have been abused by family members. More than half of all prisoners come from single parent families, and 60 percent of juveniles in custody have parents who abuse alcohol or drugs. Moreover, nearly a third of adult prisoners have a brother who has been convicted (Ayres 1998). Clearly, a supportive family is immensely important for positive outcomes while the lack thereof can lead to devastating behaviors.

example, age and gender, since these are likely to partially drive the results, the complete sample has been used because of the relatively few observations and need for variance to identify clusters. Results indicate that while a natural clustering around these variables to some extent occurs, it by no means identifies each cluster alone. Furthermore, even for the cluster that distinguishes most by gender and age, the cluster analysis still provides very interesting information and evidence of vulnerable groups.

Argentine youth based on this sample are clustered in six clusters. Applying the cluster methodology from Section 2.2 to the data described in Section 2.1, six clusters are found to be optimal for a discussion of risk and protective factors, as well as consequences and outcomes for youth. Appendix C shows that the stopping rules for choosing the optimal number of clusters are inconclusive, and therefore dendrograms, which show the similarity of different clusters, were considered. The dendrograms indicate that six clusters are the optimal solution. Appendix D shows the dendrogram for six clusters.

The following section discusses what each cluster is characterized by and to what extent it is at risk and/or already suffering the consequences. Section 4.2 will discuss linkages between factors and outcomes, and suggest causality between income and positive outcomes, as well as between lack of parental education and negative outcomes.

4.1 The Six Clusters

The characteristics of the six clusters are shown in Table 4.1 and discussed below. For a geographical distribution compared to the sample average, see Figure E.1 in Appendix E.

Low Risk Clusters: Clusters 1 and 3 (53.6 percent)

The majority of Argentine youth are found to be little exposed to serious risk factors. In fact, 53.6 percent of youth in the sample are found to have important protective factors, few risk factors, and generally positive outcomes and behaviors. Both youth clusters live in a safe environment. They are not at risk because of lack of parental education or by living in an insecure neighborhood. Instead, they come from well-off households, have healthcare, and live with their parents.

The two clusters only distinguish by few characteristics. While the majority (cluster 1, 39.8 percent) does not participate much in societies, with topics such as sports, culture, religion, student, politics, etc., youth in the smaller cluster (cluster 3, 13.8 percent) are better connected and participate to a larger extent in such activities. Youth in the latter cluster have low trust in the media, but this may be explained by a more critical view, based on their higher level of education and extent to which they exercise citizenship. To some surprise, youth in this cluster smoke and drink to a larger extent than others, possibly because they can afford to go out, etc., and apparently this kind of substance abuse it not a good indicator of an overall negative outcome.

Medium Risk Clusters: Clusters 2 and 4 (21.5 percent)

More than one in five Argentine youths are at an intermediate risk level, exposed to some risk factors that may have serious impact on their well-being, or that may already be showing their effects. The two clusters on this risk level are not as homogenous as the case of low risk clusters. However, they share the positive features of being relatively well educated and connected socially via sports or cultural associations. However, both also share a negative outcome: They are victimized by crime and violence. In fact, all youths in cluster 4 have been a victim of crime.

The two clusters at medium risk have some differences in characteristics. Relatively many youth in cluster 2 (6.4 percent) have been exposed to domestic violence, and tend to initiate sex and work early. In comparison, youth in cluster 4 (15.1 percent), which are predominantly male, are better off financially, but see their neighborhoods as more insecure and do put trust in the community.

High Risk Clusters: Clusters 5 and 6 (24.9 percent)

One in four Argentine youths lacks protective factors, is at serious risk, and suffers the consequences of these. Youth in these two clusters are generally older than average for the sample, and they do not attend school, either because they work, are unemployed, work in the home, or are idle. These young Argentines initiate sex early, have unsafe sex and therefore have children to a much larger extent than other youth clusters; events that also lead to school dropout. Like their parents, they lack education, they do not vote and are not socially connected through sports or club activities. Many come from poor households, often live without their parents' protection and have no healthcare. Finally, these youth have low trust in the community.

Youth in cluster 5 (9.3 percent) are predominantly female, have the highest proportion of indigenous people and are all married. These youths live in insecure neighborhoods, leave school because of work in the home or to take care of their children and have a lack of trust in the government. They initiated sex early and had the first child at a young age. Finally, youth in this cluster are victims of crime and cannot afford to live in a secure area.

Cluster 6 youth (15.7 percent) have to a large extent dropped out of school, partly because of lack of motivation and early entrance to the labor market. This cluster, which is also overrepresented by females, is at risk because of exposure to domestic violence, low trust in the media or community, as well as perceived discrimination if unable to find work. To some surprise, these youth have a high trust in the government, and they do not drink or smoke. Again, it is clear that the use of alcohol and tobacco does not reveal the risk level of the cluster by itself, because the cluster is at serious risk in spite of little use of these substances.

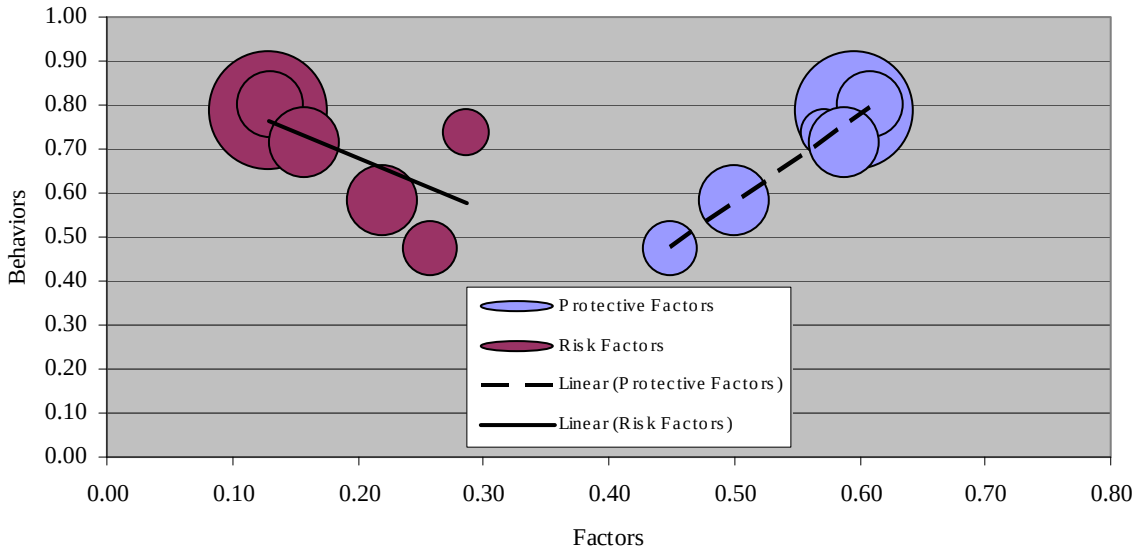
Table 4.1: Cluster Analysis, Argentine Youth 2005						
	Cluster number					
	1	2	3	4	5	6
Variable						
Male	0.43	0.43	0.55	0.54	0.20	0.46
Age	18.45	18.93	18.33	18.54	21.38	19.89
Work	0.13	0.18	0.10	0.17	0.34	0.45
Behaviors/Consequences*	**0.79**	**0.74**	**0.80**	**0.72**	**0.47**	**0.58**
Not idle	1.00	0.99	1.00	0.99	0.50	0.45
Not dropped out of school	1.00	1.00	1.00	0.96	0.62	0.28
Age started working	0.69	0.57	0.64	0.65	0.49	0.56
Age at sexual initiation	0.76	0.63	0.78	0.75	0.53	0.61
Age at first child	0.98	0.95	0.98	0.98	0.61	0.90
Not married	1.00	1.00	1.00	1.00	0.00	0.97
Participate in societies	0.01	0.11	0.31	0.15	0.09	0.07
Not victim to violence	0.94	0.88	0.92	0.81	0.90	0.89
Not victim to crime	1.00	0.80	1.00	0.00	0.71	0.82
Do not drink or smoke	0.28	0.38	0.23	0.29	0.33	0.38
Do not use drugs	0.97	0.92	0.97	0.93	0.92	0.90
Voted at last election	0.87	0.87	0.86	0.88	0.69	0.76
Do not have children	0.96	0.91	0.97	0.96	0.23	0.79
Have safe sex (or no sex)	0.68	0.54	0.73	0.66	0.18	0.47
Attend school	0.87	0.80	0.90	0.82	0.16	0.00
No early employment	0.65	0.49	0.57	0.60	0.46	0.49
Education level	0.74	0.69	0.73	0.73	0.63	0.61
Protective Factors*	**0.60**	**0.57**	**0.61**	**0.59**	**0.45**	**0.50**
Trust in the government	0.61	0.59	0.58	0.60	0.57	0.62
Trust in the media	0.44	0.37	0.42	0.45	0.43	0.38
Trust in the community	0.47	0.50	0.47	0.46	0.45	0.45
Living with parents	0.76	0.71	0.75	0.71	0.22	0.67
No negative reasons for no jobs	0.93	0.94	0.93	0.91	0.91	0.83
Healthcare insurance	0.64	0.50	0.63	0.56	0.46	0.37
Member of sports or cultural society	0.32	0.41	0.50	0.42	0.17	0.26
Income proxy	0.59	0.56	0.60	0.59	0.39	0.45
Risk Factors*	**0.13**	**0.29**	**0.13**	**0.16**	**0.26**	**0.22**
Domestic violence in household	0.00	1.00	0.00	0.00	0.06	0.17
Lack of parental education	0.43	0.50	0.43	0.45	0.62	0.63
Insecure neighborhood	0.42	0.48	0.42	0.58	0.57	0.51
Indigenous	0.02	0.02	0.03	0.04	0.05	0.01
Left school because of no motivation	0.02	0.00	0.02	0.03	0.08	0.16
Left school because of child	0.00	0.00	0.00	0.00	0.25	0.05
Left school to work in household	0.00	0.00	0.01	0.01	0.18	0.03
Number of observations	507	82	176	192	118	200
Proportion (percent)	39.8	6.4	13.8	15.1	9.3	15.7
Group	Low Risk	Medium Risk	Low Risk	Medium Risk	High Risk	High Risk

Note: Italic indicates variables used for clustering. Because some variables are ranked the means do not always indicate the proportion of youth. * Average of the category.
Source: Own calculations on ESCVJA (four urban areas)

4.2 Factors and Outcomes

Factors and behaviors or outcomes are strongly related. As a comprehensive measure of risk and protective factors and outcomes, the mean of these indicators (indicated by a star in Table 4.1) is used for each cluster. Figure 4.1 shows that protective factors are positively correlated with positive behaviors or outcomes: Clusters with more protective factors tend to have better outcomes than clusters with less protective factors. At the same time risk factors are negatively correlated with positive behaviors or outcomes: Clusters exposed to more risk factors tend to have worse outcomes than clusters with fewer risk factors.

Figure 4.1: Correlation Between Protective/Risk Factors and Behaviors/Consequences, Argentina 2005

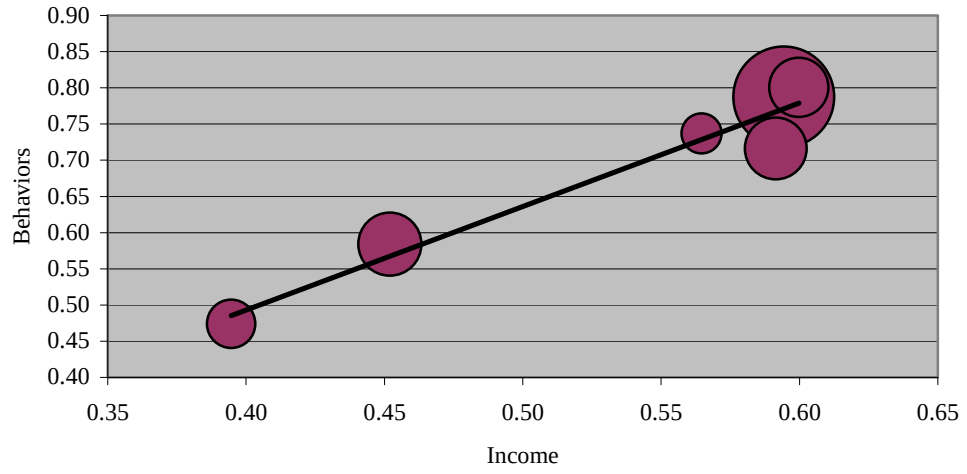


Note: Size of bubble indicates cluster size.
Source: Own calculations on ESCVJA (four urban areas)

Income is positively correlated with behaviors or outcomes. The impact on outcomes from higher income is evident.[9] Higher income is associated with higher education, access to information, and exercising citizenship, which is emphasized as a crucial element for youth development in the 2007 World Development Report (World Bank 2007). It is clear that youth with the highest risk level are also those with the lowest composite income proxy (Figure 4.2). Higher income protects against risk factors, such as an insecure neighborhood, and facilitates that youth can attend school, even if there is a cost connected such as with private schools or universities.

[9] *Income proxy* is a composite variable, consisting of indicators for the number of rooms and the quality of bath/toilet facilities in the household, whether the young person has a mobile, an email account, or a pc, whether the person uses the internet, and has attended a private school (see also Appendix B).

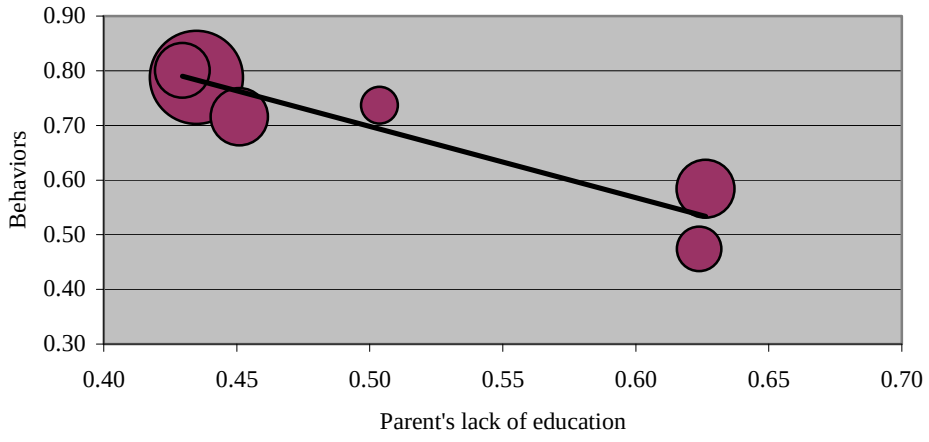
Figure 4.2: Correlation Between Income proxy and Behaviors/Consequences, Argentine Youth 2005



Note: Size of bubble indicates cluster size.
Source: Own calculations on ESCVJA (four urban areas)

Parents' lack of education is negatively correlated with behaviors or outcomes for their children. Intergenerational effects are important, harming youth if their parents have little or no education (Figure 4.3). The educational background of low skilled parents likely predicts whether families emphasize education and consider it a priority for their children. For example, less educated parents may not motivate their children to study, because they do not value education highly. Likewise, the lack of parents' schooling may mean they are not able to educate their children about for instance safe sex. Results support these hypotheses, because of the link between parents' education and outcomes for youth.

Figure 4.3: Correlation Between Parents' Education and Behaviors/Consequences, Argentine Youth 2005



Note: Size of bubble indicates cluster size.
Source: Own calculations on ESCVJA (four urban areas)

5. Conclusion

Argentine youth are currently peaking in numbers, and this creates challenges but also opportunities for the country. It is immensely important to ensure young Argentines a smooth transition from childhood to adulthood to benefit from the large cohorts entering the working age. This requires further attention to and investment in youth to support them by increasing protective factors and reducing the negative factors affecting their general well-being and future outcomes. Based on a household survey covering youth in four urban areas in Argentina findings suggested that:

On one hand important protective factors exist, and positive outcomes are observed for many youth in the sample. For example, a loving and supportive family and a social network to interact with and rely on benefit many youth. Also, most youth attend school and thus accumulate human capital, increasing their value in the labor market.

On the other hand, a significant share of Argentine youth are exposed to risk factors that jeopardize a positive outcome later in life, or which have already resulted in a negative outcome. For example, lack of parents in the household as support and role models or general lack of social integration, are serious risk factors for youth. Likewise, early (unsafe) sexual initiation, early marriage, and teenage pregnancy are disturbing issues affecting the well-being of youth. For out of school youth, unemployment and idleness are risk factors, because they may reduce self-esteem by the feeling of marginalization or lead to skill degradation.

A cluster analysis assigned youth to six clusters based on characteristics, and the clusters were organized in three risk levels:

1. High risk (24.9 percent): Risk factors and lack of protective factors are strongly connected and interactive, because besides the presence of risk factors, youth in this group also lack protective factors. These youths are predominantly older and low educated married females with children. Also among risk factors characterizing youth in this group are that they do not attend school, and live without their parents in areas not perceived to be safe.

2. Medium risk (21.5 percent): Some youth in this group are already in need of immediate assistance, but unless careful attention is paid, these and others may fall into the high risk group. While this group is relatively well educated and socially integrated via sports and cultural associations, they are also victims of crime and domestic violence, they start having sex and work early, and do not trust the community.

3. Low risk (53.6 percent): The consequences of living in a protected environment are clear: Youth in this group are to a large extent protected against becoming victims to crime or violence, they have their sexual debut late, and when they start having sex, they protect themselves,

probably because of their well educated parents and own knowledge from school. Thus, the absence of risk factors is filled by a range of protective factors.

Risk factors are associated with negative behavioral outcomes, and protective factors seem to help youth toward positive outcomes. Results showed a clear connection and thus supported the plausible causality between factors and outcomes. For example, higher income is connected with better outcomes, while having less educated parents is connected with negative outcomes.

5.1 Policy Implications

In summary, almost half of Argentine youth are exposed to important risk factors, and of those half are at a high risk level, i.e., one in four Argentine youths are in need of immediate attention. Given this large proportion of youth experiencing serious risk factors and few protective factors combined with the linkages between factors and outcomes, there is an urgent need for policy intervention to enhance opportunities and support for Argentine youth.

Youth programs should address all risk levels. The low risk group and to some extent the medium risk group should be targeted with preventive measures, but some youths in the latter group may also be in immediate need of rehabilitation programs.[10] The high risk youths are in obvious need of help in a number of ways, because youth in this group already suffer the consequences of a series of risk factors.

While all factors affect outcomes, some are found to be more characteristic for youth at the highest risk level and may be used to identify youth at risk early and identify how to best help them. For example, careful attention has to be paid to young females with no healthcare and low educated parents, because these characteristics are clearly associated with school dropout, unsafe sex, etc., which are characteristics of the high risk cluster (cluster 5). Thus, issues need to be addressed at an early stage to avoid further escalation in risk factors and negative outcomes. Examples of measures to help youth include skill upgrading, job training, life skill training, financial aid, family and parenting guidance, and health support, but there is also a need of tertiary attention such as drop-in counseling centers, health care access, and group homes where, e.g., youth exposed to domestic abuse can be placed. Also, revitalization and upgrading of insecure neighborhoods would be an important prevention and attention program to reduce crime and violence and create protective factors supporting youth.[11]

[10] Previous studies have shown the cost for society is higher when focusing on those at extreme risk than the cost of preventing negative outcomes. This is because of the direct costs of rehabilitation programs (such as drug rehabilitation clinics), but also from a loss of productivity or for instance lower tourism, which likely result from youth unemployment, crime, violence, and health issues.

[11] Justesen and Verner (2007a) provide a range of possible programs targeting all risk levels and with focus on both prevention and attention.

Considering the relationship between factors and outcomes, it is of major importance that programs focus both on creating positive factors protecting youth, such as financial security, social integration, and trust in public institutions, and on reducing exposure to risk factors, such as domestic violence, insecure neighborhoods, and having to leave school because of the need to work in the household. A combined effort, creating protective factors and reducing risk factors, will make it easier for youth to evolve into well-functioning adults with positive behaviors and outcomes.

With unsafe sex having been identified as a characteristic of youth at high risk, an improved health sector could effectively help reduce risk factors. Argentina had—at least until recently—one of the lowest levels of family planning among middle-income countries in the region (World Bank 2006). By scaling up family planning and counseling, teen pregnancies and the potentially negative consequences thereof could be reduced. Sexually transmitted diseases (STDs) may also be reduced by information campaigns and investment in prevention efforts among youth. While treatment for HIV/AIDS is universal, STDs also need to be diagnosed and treated systematically to avoid them spreading. The government has already launched a prevention program for sex workers and use widespread media campaigns to support condom use. However, findings here suggest that unsafe sex is common among youth and campaigns therefore need to also target this particular group to avoid negative outcomes from risky sexual behaviors. Moreover, the healthcare insurance and healthcare services vary significantly in coverage and quality across provinces and work sector (formal/informal and public/private). The findings based on urban areas likely underestimates the general problem for youth since especially Buenos Aires spends more per capita on healthcare than rural areas. Thus, improving healthcare insurance would provide an important protective factor.

School dropout is an important identifier for youth at high risk and therefore the education sector can be used to create protective factors and positive outcomes while reducing risk factors. Education is of much bigger concern in rural areas than in the urban areas covered here, exacerbating the overall situation since schooling was found to be a key element for youth in urban areas. Experience from development and application of pedagogical and organizational models tailored for the particular social, cultural, and economic context in rural projects (e.g. World Bank 2005) should also be exploited in urban areas. Active citizenship can also be motivated through the schooling system. For example, World Bank projects support provinces in improving quality, equity, and efficiency in the education system and in developing active citizenship. This support contributes to diminish social inequality through an increase in enrollment rates and to help youth at risk to fulfill their educational needs. Going further in this direction with specific emphasis on youth at risk would support their needs and allow the group to play a more active part in and affect policy decisions. A concrete example in school development plans includes productive activities (such as a vegetable garden) and cultural activities, sports, public health and awareness campaigns, and care of community resources (ibid.).

References

Ayres, Robert (1998) “Crime and Violence as Development Issues in Latin America and the Caribbean”. World Bank: Latin America and Caribbean Studies.

Barker, Gary and Fontes, Miguel (1996) “Review and Analysis of International Experience with Programs Targeted on At-Risk Youth”. LASHC Paper Series No. 5. World Bank. Washington DC.

Berkin, Pavel (2002) “Survey of Clustering Data Mining Techniques”. Accrue Software, Inc.

Chatterji, Pinka and DeSimone, Jeff (2005) “Adolescent Drinking and High School Dropout”. NBER. Working Paper. No. 11337.

Cunningham, Wendy and Maloney, William (2001) “Heterogeneity among Mexico’s Microenterprises: An Application of Factor and Cluster Analysis”. University of Chicago.

Eckstein, Zvi and Wolpin, Kenneth (1999) “Why Youth Drop Out of High School: The Impact of Preferences, Opportunities, and Abilities”. Econometrica. Vol. 67. No. 6. pp. 1295-1339.

Fares, Jean and Raju, Dhushyanth (2007) “Child Labor across the Developing World: Patterns and Correlations”. World Bank Policy Research Working Paper No. 4119.

Fasulo, Daniel (1999) “An Analysis of Recent Work on Clustering Algorithms”. Technical Report 01-03-02. University of Washington.

Fitzpatrick, Kevin (1997) “Fighting Among America’s Youth: A Risk and Protective Factor Approach”. Journal of Health and Social Behavior. Vol. 38. No. 2. pp. 131-148.

Justesen, Michael and Verner, Dorte (2007a) "Factors Impacting Youth Development in Haiti". World Bank Policy Research Working Paper No. 4110.

Justesen, Michael and Verner, Dorte (2007b) “Argentine youth – Labor Market Response to Economic Fluctuations.” World Bank. Washington DC.

Lam, David (2006) “The Demography of Youth in Developing Countries and its Economic Implications”. World Bank Policy Research Working Paper No. 4022.

World Bank (2007) “World Development Report 2007 – Development and the Next Generation”. Washington DC.

World Bank (2006) “Essential Public Health Functions and Programs Project”. Project Appraisal Document”. Washington DC.

World Bank (2005) “Rural Education Improvement Project - Promer”. Project Appraisal Document. Washington DC.

Appendix A

The values of variables used for the cluster analysis have to be within the interval 0 and 1. Binary variables tend to drive the clustering process, and therefore most variables have been redefined to a broader set of values inside the interval. Because of this the mean of most variables cannot be interpreted as the proportion with a specific characteristic. Thus, Table A.1 mainly provides an idea of the variables used for the clustering. More detail on the specific variables used for the clustering is given in Appendix B.[12]

The categorization in behaviors/consequences, protective factors, and risk factors is not straight forward since an outcome may also be a factor leading to another outcome, and whether a factor is defined as a risk or a protective factor depends on the coding of the variable. The categorization and selection of variables for the clustering process applied here is based on the work and advice of Emily Bagby and Wendy Cunningham, who analyzed the cases of Chile and Mexico.

Table A.1: Variables used for Cluster Analysis for Argentine Youth, 2005

Variable	Mean	**Variable**	Mean
Number of observations	1,275	Age	18.98
Male	0.45	Work	0.20
Behaviors/Consequences	0.71	**Protective Factors**	0.57
Not idle	*0.86*	*Trust in the government**	*0.60*
Not dropped out of school	*0.85*	*Trust in the media**	*0.42*
*Age started working**	*0.63*	*Trust in the community**	*0.47*
*Age at sexual initiation**	*0.71*	*Living with parents**	*0.68*
*Age at first child**	*0.93*	No negative reasons for no jobs	0.91
*Not married**	*0.90*	Healthcare insurance	0.56
*Participate in societies**	*0.10*	Member of sports or cultural society*	0.34
Not victim to violence	*0.90*	Income proxy*	0.55
Not victim to crime	*0.78*	**Risk Factors**	0.17
*Do not drink or smoke**	*0.30*	*Domestic violence in household*	*0.10*
*Do not use drugs**	*0.95*	*Lack of parental education**	*0.49*
Voted at last election	0.83	*Insecure neighborhood**	*0.48*
Do not have children	0.86	Indigenous*	0.03
Have safe sex (or no sex)*	0.59	Left school because of no motivation	0.05
Attend school	0.66	Left school because of child	0.03
No early employment	0.58	Left school to work in household	0.03
Education level*	0.70		

Note: Italics indicate variables used for clustering. * Variable is ranked – thus value does not indicate the proportion of youth.
Source: Own calculations on ESCVJA (four urban areas)

[12] Variables in Table A.1 in italics are used for the cluster process, whereas the other variables are also included in the analysis of the specific clusters in Section 4.

Appendix B

The variables used for the cluster analysis have to be in the range of 0 and 1. The variables used for the cluster analysis, as well as the descriptive characteristics, are defined below.

---------- General characteristics ----------

Male: 1 if male (binary).
Age: Years (actual age).
Work: 1 if work (binary).

---------- Behaviors/Consequences ----------

Not idle: 1 if working or in school (binary).
Not dropped out of school: 1 if not dropped out (binary).
Age started working: 1 if age 22 or above (ranked).
Age at sexual initiation: 1 if age 20 or above (ranked).
Age at first child: 1 if age 21 or above (ranked).
Not married: 1 if single (ranked).
Participate in societies: 1 if member of at least five societies (ranked). Categories include: Sports, religious, student, community, artistic/cultural, ecological, human rights, youth group, youth association, collective, union, political party or group, soccer, fan club, and others.
Not victim to violence: 1 if never experienced violence (binary).
Not victim to crime: 1 if not victim to property theft last year (binary).
Do not drink or smoke: 1 if both drink and smoke (ranked). Categories include: Frequent, occasional, used to, never tried.
Do not use drugs: 1 if never tried drugs (ranked). Categories include: Never tried, tried but not using, and currently using drugs.
Voted at last election: 1 if voted at last election or below age 18 (binary).
Do not have children: 1 if no children (binary).
Have safe sex: 1 if never had sex (ranked).
Attend school: 1 if attending school (binary).
No early employment: 1 if not worked before age 18 (binary).
Education level: 1 if tertiary educated or currently undertaking tertiary education (ranked). Categories include: No education, EGB1-3 or primary, polimodal or secondary, and tertiary or university.

---------- Protective Factors ----------

Trust in the government: 1 if high average trust in government institutions (ranked). Categories include: National government, provincial government, municipal government, politicians, military, police, and judicial. Questionnaire categories for trust are: Very high (value 1), high (value 2), medium or “do not know” (value 3), low (value 4), and very low (value 5). “Do not know” was treated as medium to avoid dropping too many

observations. The sum of the values for the seven institutions was assigned new discrete values based on the distribution to fit the internal [0,1], viz. 0, 0.25, 0.5, 0.75, and 1, with the lowest scores assigned the highest values.

Trust in the media: 1 if high average trust in the media (ranked). Categories include: Newspapers, television, and radio. See procedure under "Trust in the Government".

Trust in the community: 1 if high average trust in the community (ranked). Categories include: School, university, and church. See procedure under "Trust in the Government".

Living with parents: 1 if living with both parents (ranked).

No negative reasons for no job: 1 if not giving a negative reason for not having a job (binary). Categories include: Not enough experience, too young, not enough jobs, and because of discrimination.

Healthcare insurance: 1 if having health insurance (binary).

Member of sports or cultural society: 1 if practicing sport and culturally active (ranked).

Income proxy: 1 if high income (ranked). Income measure combined of: Number of rooms in household, have mobile and/or pc, use internet and/or email, attended private school, and existence of bath/toilet in household. Values assigned for the index are based on equally weighted contributions for the five index contents. For example, the value for access to toilet/bath enters with 20 percent weight with values of 0 for no toilet, 0.5 for non-automatic toilet or no water, and 1 for running water.

---------- **Risk Factors** ----------

Domestic violence in household: 1 if domestic violence in household (binary).

Lack of parental education: 1 if not educated and not currently studying (ranked). Categories include: No education, EGB1-3 or primary, polimodal or secondary, and tertiary or university.

Insecure neighborhood: 1 if very insecure (ranked). Categories include: Very insecure, insecure, more or less safe, safe, very safe.

Indigenous: 1 if indigenous (ranked).

Left school because of no motivation: 1 if left school because of lack of motivation (binary).

Left school because of child: 1 if left school because of taking care of child (binary).

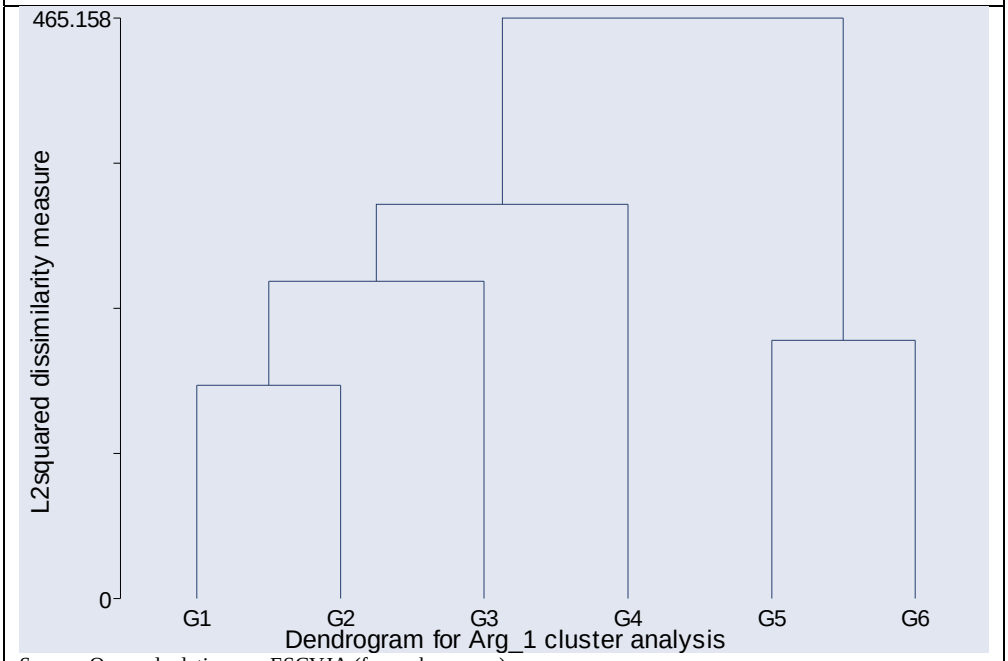
Left school to work in household: 1 if left school because of work in household (binary).

Appendix C

Table C.1: Number of Clusters		
	Duda/Hart	
Number of clusters	Je(2)/Je(1)	Pseudo T-squared
1 cluster	0.8905	156.58
2 clusters	0.8695	143.34
3 clusters	0.8474	137.37
4 clusters	0.8481	56.59
5 clusters	0.8475	105.66
6 clusters	*0.8095*	*46.58*
7 clusters	0.7756	54.96
8 clusters	0.8899	62.48
9 clusters	0.8727	55.74
Source: Own calculations based on ESCVJA		

Appendix D

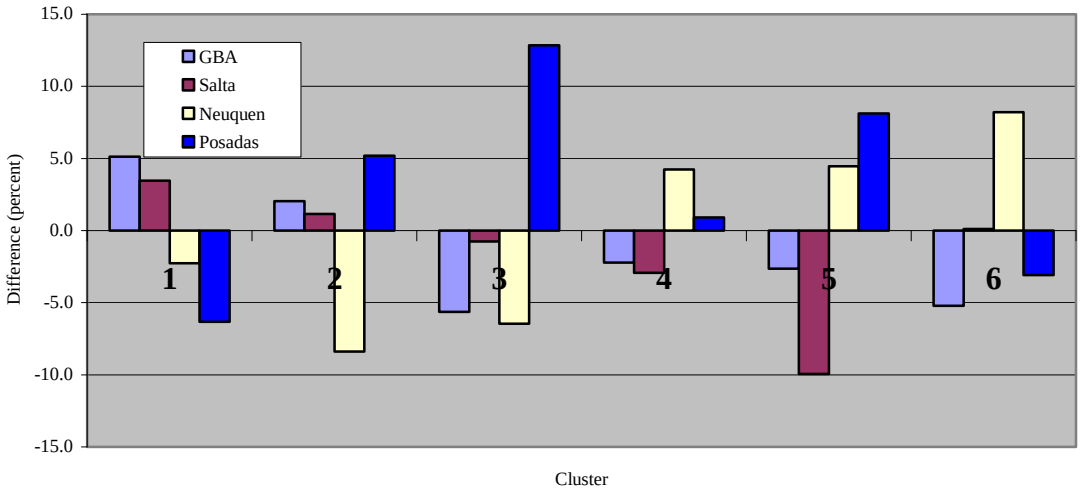
Figure D.1: Dendrogram for Six Clusters



Source: Own calculations on ESCVJA (four urban areas)

Appendix E

Figure E.1: Proportion of Youth in a Specific Cluster From a Province, Compared to the Average for the Entire Sample, Argentina 2005



Source: Own calculations on ESCVJA (four urban areas)